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CNL Assignment-9

Q.1 Explain TCP header.

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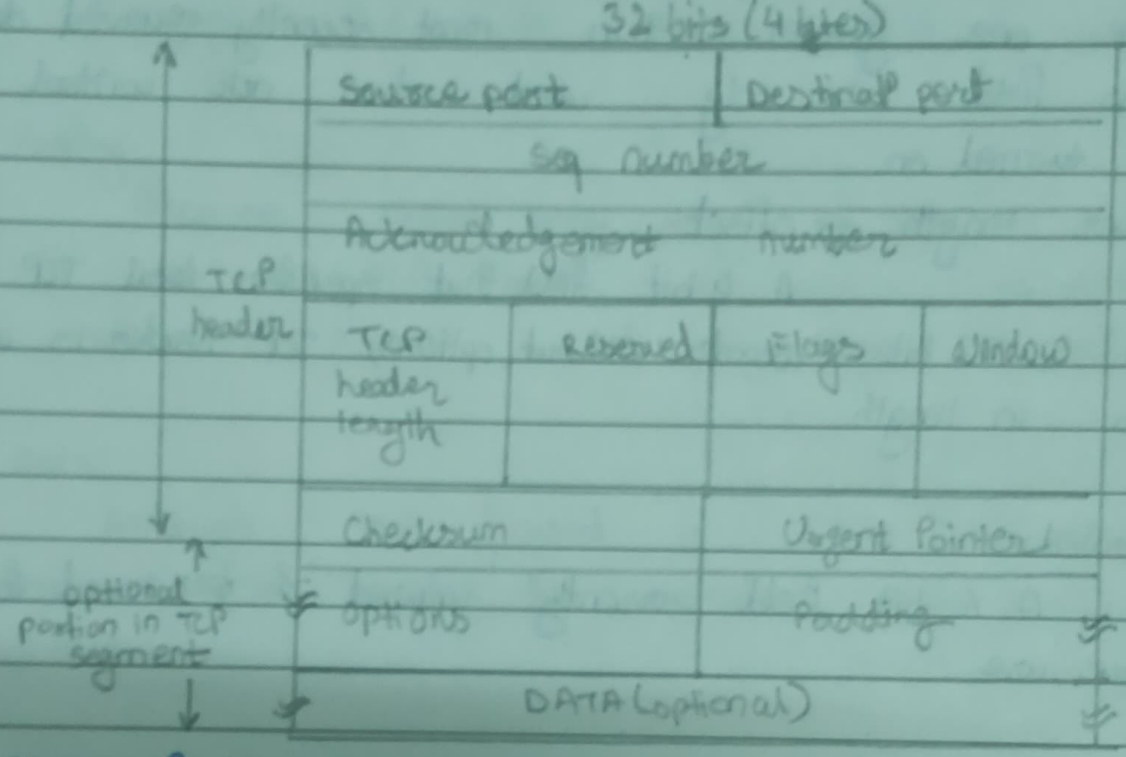

- **Source Port:**
  A 16 bit number identifying the application TCP segment originated from within sending host. Well ports (0 through 1024) registered ports (1024 through 49,151) & private ports (49,152) through 63,535)

- **Destination port:**
  A 16 bit no. identifying application TCP segm defined for on a receiving host. Destination ports use same port number assignments as these set aside for sour ports.

- **Sequence number:**
  A 32 bit number identifying current position of first data link in segment within entire byte stream for TCP connection.

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- Acknowledgment Number:
  A 32 bit number identifying next data byte sender expects from receiver. ∴ number will be one greater than most recently received data byte This field is only used when ack control bit is turned on.
- Header length or offset:
  A 4 bit field that specifies total TCP header length in 32 bit words. Without options, TCP header is always 20 bytes in length.
- Reserved:
  A 6 bit field currently unused & reserved for future use.
- window:
  A 16 bit int used by TCP for flow control in form of data transmission window size. Max value of this field would limit window size 65,535 bytes but 'window scale' option is used to larger the window
- Check sum:
  This 16 bit value will be compared with value of receiver generates using same computation. If values match, the receiver can be very confident that segment arrived intact.
- Urgent pointer:
  In certain circumstances, it may be necessary for a TCP sender to notify the receiver of urgent data should be processed by receiving applications as soon as possible

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- **Options:**
  In order to provide additional functionality, several optional parameters may be used between a TCP sender & receiver. The most common option is max segment size (MSS)

- **Padding:**
  Because option may vary in size, it may be necessary to 'pad' the TCP header with zeros so that segment ends on 32 bit word boundary as defined by stand

- **Data:**
  Although not used is some circumstances This vari length field carries the application data from TCP sender receiver.

Q.2. What is bind()?

→ The server asks the operating system to enter information in socket.

Q.3. What is listen()?

→ The server asks the operating sys to passive & liste to the client which needs to be connected to this server. This is because TCP is connection oriented protocol so a connection needs to be made before transferring data.